

Building a New Digitalised World Through Technology Centrism

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With the rapid development of information technology, the world has entered the digital age. Digitisation, networking and artificial intelligence (AI) are the most important developments in the new era. The development of new technologies has made countries around the world seek a new driving force for the digital world and a new impetus for geopolitics and geoeconomics.

Technology Centrism

Technology centrism refers to the trend in the social construct, behaviour mode and decision-making processes in which science and technology are not only means to achieve policy goals and tools to legitimise political power, but are also goals that are constantly pursued.⁽¹⁾ Technology centrism occurs within a country and expands beyond its borders as well. It not only becomes the strategic choice of the country and enterprises, but also becomes the unconscious guideline of individual actions. It is multidimensional, penetrating many different sectors and fields, including economic and social operations.

The global order is being restructured around science and technology. Science and technology occupy a prime position in national strategic decision-making and competition among big countries. The most prominent manifestation is how the US-China trade spat has increasingly evolved into the control of and competition for core technologies and key applications. National policy trends and propaganda often reflect and lead the public's social psychology. Enterprises have also realised the importance of digital transformation and innovation. The top investment hotspots are all related to science and technology, such as intelligent manufacturing, semiconductor, communication technology (5G) and AI.

Therefore, the development of technology affects all levels of decision-making and psychological thinking, and the pursuit of science and technology has become global social imaginaries. It is worth mentioning that, although technology centrism has become a national strategic thinking to some extent, it does not contain value judgment. It is an inevitable social trend, which is increasingly prominent in the era of rapid social change and technology development.

Policy Choices Under Technology Centrism: Tech-Nationalism or Tech-Globalism?

As a value neutral social construct, technology centrism can provide two policy options—tech-nationalism and tech-globalism—but the choice will differ from country to country. Tech-nationalism is described as technology innovation that is led by the government, while the domestic market is closed or conditionally open to foreign countries, with the aim to prevent globalisation and promote national interests. On the other hand, tech-globalism is described as technology innovation that is led by global market forces, aiming at promoting global interests and promoting cooperation with other countries.(2)

Contemporary tech-nationalism exists in the context of comparison with tech-globalism, and the distinction between the two is closely related to a country's economic system, development level and international environment. Countries with innovative ability implement tech-nationalism policies to varying degrees. But tech-nationalism and tech-globalism are not single policy choices, and countries can adopt one or the other for different fields.

According to the differences in motivation, goal, measures and international impact, contemporary tech-nationalism can be divided into two types—defensive tech-nationalism and offensive tech-nationalism. The strategic motive of a country adopting offensive tech-nationalism policy is to suppress competitors and maintain its dominant position in some or all sectors. It aims to maintain a technology monopoly and implement technology suppression on other countries through technology export control, market access restriction, knowledge transfer restriction, and comprehensive political and diplomatic means. Therefore, offensive tech-nationalism in essence is technology hegemony, which rises from political hegemony.

The basic motivation of a country adopting defensive tech-nationalism is internal

balancing and self-improvement—to change its relatively underdeveloped technological environment and the development level of its science and technology industries, and catch up with the advanced economies. It mainly promotes national scientific and technological innovation, and the development of these sectors through research and development, funding and preferential policies.

Global Powers and Their Technology Orientations

Countries adopt different policies towards each other at different times. The strategic orientation and status of science and technology development of the four main international actors—the US, European Union (EU), China and India—can be summarised through their policy choices—offensive tech-nationalism with unilateral hegemonism (US), defensive tech-nationalism with multilateral cooperation (EU), defensive tech-nationalism with independence and cooperation (China), and defensive tech-nationalism with unilateral cooperation (India).

US: Offensive tech-nationalism with unilateral hegemonism

Offensive tech-nationalism with unilateral hegemonism means to suppress competitors and maintain a dominant position in technology through unilateral aggressive means. Due to its leading position in science and technology, the US's strategic goal is to maintain its existing advantages, to ensure that the existing interest pattern will not be broken, and to continue to maintain its additional benefits in the international system and industrial chain. Coupled with the Trump administration's 'America First' strategy, the US overall policy posture can be termed as unilateral hegemonic offensive tech-nationalism.

In policymaking related to key infrastructure, the US has constantly stressed value differences and national interest contradictions, and politicised scientific and technological issues. The US government has proposed the Clean Network plan to protect the country's key telecommunications and technological infrastructure.⁽³⁾ It lists five new lines of effort—Clean Carrier is “to ensure untrusted People's Republic of China (PRC) carriers are not connected with U.S. telecommunications networks”; Clean Store is “to remove untrusted applications from U.S. mobile app stores”; Clean Apps is “to prevent untrusted PRC smartphone manufacturers from pre-installing –or otherwise making available for download – trusted apps on their apps store”; Clean Cloud is “to prevent U.S. citizens' most sensitive personal information and our

businesses' most valuable intellectual property, including COVID-19 vaccine research, from being stored and processed on cloud-based systems accessible to our foreign adversaries through companies such as Alibaba, Baidu, and Tencent"; and Clean Cable is "to ensure the undersea cables connecting our country to the global internet are not subverted for intelligence gathering by the PRC at hyper scale".

Such policy tendencies have and will continue to erode the foundation of ties with China, weaken the momentum of sustainable development of the world economy, and cause serious negative impact on global strategic stability.

The EU: Defensive tech-nationalism with multilateral cooperation

Defensive tech-nationalism with multilateral cooperation means to keep up with technology innovation and industrialisation through multilateral cooperation. The EU mechanism has long been a product of intergovernmental multilateral cooperation. In the technology supply and value chains sphere, the EU is generally behind the US and ahead of developing countries. The goal of the EU's technology policy is to provide advanced, safe and reliable technical policies for member states through multilateral cooperation. Therefore, the EU's policy can be summed up as defensive tech-nationalism with multilateral cooperation.

For infrastructure security, the EU has been advocating sharing and cooperation within the union, expecting to reach a unified set of information and communication technology (ICT) standards for the whole EU.⁽⁴⁾ Unlike the US, which banned Huawei's equipment for security reasons,⁽⁵⁾ the EU has entrusted the supervision of 5G construction to the European Network and Information Security Agency, which was established in 2019 according to the EU Cybersecurity Act and which conducts the risk assessment of suppliers based on security and objective standards. On 29 January 2020, the EU released the 'Secure 5G deployment in the EU - Implementing the EU toolbox' strategy⁽⁶⁾, which aims to reduce the cyber security risks faced by member states at the regional level, emphasising that the countries should assess the risks of 5G network infrastructure suppliers. It also puts forward specific schemes to ensure the diversity of suppliers, with no mention of excluding Huawei and other suppliers from entering the EU market.

China: Defensive tech-nationalism with independence and cooperation

Defensive tech-nationalism with independence and cooperation means to catch up in

the technology race through independent innovation as well as multilateral cooperation. As a big developing country with historically backward technology, China is committed to the great goal of national rejuvenation. At the same time, China hopes not to rely on or be controlled by others, and therefore vigorously promotes independent research and development of core technologies, while attaching importance to cooperation with other countries. China has been promoting technological cooperation on different multilateral platforms, such as the BRICS, Shanghai Cooperation Organization and the Belt and Road Initiative. China is seeking technological cooperation with the developed countries, including the US and the EU, while welcoming foreign technological investment as long as it abides by Chinese regulation.

China emphasises the construction of information infrastructure with Chinese characteristics. In the 'Made-in-China 2025' strategic plan(7), the government pointed out that the country is still in the process of industrialisation and there is a big gap compared with advanced countries. Therefore, it is proposed to rely more on local equipment and brands to achieve the transformation from Made in China to Designed in China. China's 5G technology and mobile network facilities have begun to enter the world market, and China's standards are gradually accepted by many countries in the world.

India: Defensive tech-nationalism with unilateral cooperation

Defensive tech-nationalism with unilateral cooperation means to catch up in the technology competition through selective cooperation with some countries while purposely suppressing cooperation with others. Even though India's technology policy is shaped by its history of non-alignment and attaches great importance to the protection of its information technology industry, it is still a follower of western countries as it hopes to share the dividend of western technological innovation. India is the world's largest exporter of IT industry services.(8)

In the international competition with foreign enterprises, India favours the US position while viewing China as its main competitor. India and the US have created a wide-ranging strategic partnership that reflects "their shared values, democratic traditions, national security and economic interests, and common vision and principles for cyberspace".(9)

For the independence of its IT industry and promotion of national economic development, India has taken protective and supporting measures in key information infrastructure, giving priority to the technology and components of domestic enterprises. India has been working hard to develop a complete 5G solution independently, and some suppliers have made a breakthrough declaration.(10) The competitive relationship in the science and technology sectors and the military conflicts between China and India make India wary of Chinese enterprises. India has banned Chinese apps several times, with over 200 currently banned.(11)

From a Decoupling to a Digital Community of Interdependence

A decoupling world is emerging. Governments are trying to restrict and control foreign ICT through a series of measures, such as technology bans and restrictions, technical security requirements, domestic technical standards, data localisation requirements, export controls, tariffs, trade agreements, investment restrictions and ownership restrictions. Although these measures could well be rational choices based on technology centrism, they are likely to have unintended consequences, such as distorting the market and hindering innovation and competition, causing negative impacts on national security, cyber security, and trade and industrial competitiveness. Ultimately, ICT trade and diplomatic relations may suffer, leading to a decentralised, partially or completely decoupled technological and economic environment, thereby jeopardising the long-term growth of the global economy, and will undermine the international system in a way unseen since the Cold War.

The continuous development of digital technology determines the interdependence of the digital community. When technology becomes important for a country's development, governments should balance the advance of technology with openness and autonomy, limiting the goal of tech-nationalism and technological hegemony, reducing the interference of national politics in technology, avoid imposing pressure on scientists and engineers, and avoid excessive intervention in the market operations of enterprises and companies. As the COVID-19 pandemic has become the most serious public health emergency in the world, the contradiction between efficient pandemic prevention and data protection and between cooperative anti-pandemic research and political conflicts has become increasingly prominent. Only by limiting the negative impact of tech-hegemony and tech-nationalism and promoting global cooperation in technology can we better promote economic and social development

and improve human well-being. This should be the essential and final goal of technology centrism.

ENDNOTES

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